

## REMARKS

Claims 4-5, 7-14, and 19-45 are in the application.

The claims have been amended to more particularly point out and distinctly claim applicants' invention. New independent claim 39 incorporates the subject matter of canceled claims 1 and 2 and adds the step from original claim 6 that the binder be insolubilized to distinguish over art cited by the Examiner in the initial Official Action. New dependent claim 40 incorporates the subject matter of canceled claim 3 and adds the limitation that the base particles be fired at a temperature of at least 800 degrees C (supported in the specification at page 6, lines 9-11). New dependent claim 41 adds the limitation that the roofing granules have a porosity of between about 3 percent and 30 percent by volume (supported in the specification at page 3, lines 9-10). New dependent claim 42 adds the limitation that the mixture includes from about 10 percent to 40 percent by weight binder (supported in the specification at page 6, lines 4-8). New independent claim 44 incorporates the limitations of claims 39-42. New dependent claims 43 and 45 relate to roofing granules prepared by the processes of claims 39 and 44 respectively. Claims 4, 5, 7, 9, 11 and 13 have been amended to depend from newly presented claims rather than canceled claims. No new matter is presented in any of the amendments. The amendments are fully supported by the application as filed.

The Examiner has made final the restriction requirement despite applicants' traversal of that requirement that the alternative proposed use was not, on its face, a specific use. The Examiner explained that applicants' argument was not found to be persuasive because according to MPEP ¶ 806.05(h), for the inventions to be shown to be distinct, there is no requirement of showing a specific use. The Examiner further explains that because the alternative use proposed by the Examiner in a non-roofing

outdoor surfacing is materially different from the use in roofing surfacing, the inventions are thus distinct, and the requirement is proper.

In the Advisory Action mailed March 31, 2006, the Examiner stated that she could not withdraw the finality of the restriction requirement, but that the applicant may petition the Director for withdrawal of the restriction requirement. The Examiner also stated that the Petition may be deferred until after the final action or allowance of the claims to the invention elected, but cannot be filed later than appeal.

Applicants respectfully request reconsideration of the restriction requirement. The Examiner has not responded to applicants' argument that governing case law requires that the proposed use be both specific and substantial, and has instead merely referenced the text of the MPEP. However, the MPEP is not the exclusive source of law on this issue, and MPEP ¶ 806.05(h) must be construed in light of governing precedence, such as In re Fisher, 76 USPQ2d 1225, 1230 (Fed. Cir. 2005), cited by applicants in support of their position. If the Examiner remains unconvinced, applicant can attempt to provide evidence that there is no such substantial use.

Reconsideration and withdrawal of the restriction requirement are respectfully requested for these reasons.

Applicants gratefully acknowledge that the Examiner has withdrawn the objection to claim 16 on the ground that claim 16 was the substantial duplication of claim 7 in light of the applicants' amendment.

Claim 17 stands objected to under 37 CFR 1.75 as being the substantial duplicate of claim 8. However, claim 17 has been canceled, mooting the objection.

Claims 1, 5-8, 16-17 stand provisionally rejected under the judicially created doctrine of double patenting over claims 1-12, 21, and 25 of copending Application No.

10/600,847. This provisional rejection is respectfully traversed and reconsideration and withdrawal of the provisional rejection, as applicable to the claims as amended.

Responding to applicants' arguments, the Examiner states that the Examiner respectfully disagrees with those arguments. The Examiner further states that in contrast to applicants' argument, the respective applications claims are not distinct inventions because claims of current application are broader than those of copending Application No. 10/600,847, so that the subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application.

The Examiner's response is not understood, and in particular the asserted causal connection between the alleged breadth of the claims in the current application in comparison with the claims of the '847 application, and the result stated by the Examiner, that the subject matter claimed in the present application is fully disclosed in the copending '847 application, would be covered by any patent granted on the copending '847 application.

Applicants respectfully maintain their traverse the Examiner's contention that the subject matter of the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application.

The amended claims in the present application are not broader than those of the '847 application, but rather of differing scope and covering different subject matter. For example, independent claim 39 of the present application requires preparing porous inert base particles from a mixture of stone dust and binder, providing at least one inorganic algaecide in or within the base particles, and insolubilizing the binder. On the other hand claim 1 of the '847 application claims a process comprising providing inert base

particles, and forming first intermediate particles by coating the base particles. Claim 1 of the '847 application does not require the base particles to be formed from stone dust and a binder. Thus, claim 39 of the present application cannot be "broader" than claim 1 of the '847 application. Similarly, claim 1 of the '847 application requires coating the inert particles with a first mixture to form a first layer on the inert base particles, and claim 39 of the present application does not require application of a layer on the inert base particles. Thus, claim 1 of the '847 application cannot be "broader" than claim 39 of the present application. Thus, the respective applications claims are drawn to distinct inventions, of different scope, neither overlapping the other. The provisional double patenting rejection, as applicable to the amended claims, should be withdrawn for these reasons.

Claims 1, 5-8, 13, 14, 16 and 17 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,214,466 ("Joedicke") for the reasons of record set forth in the Office Action mailed August 10, 2005. This rejection is respectfully traversed, and reconsideration and withdrawal of the rejection are respectfully requested as applicable to the amended claims.

Claims 1, 6, 16 and 17 have been canceled, and the dependency of claims 5, 7, 8, 13 and 14 has been changed, so that these claims now depend, directly or indirectly, from new independent claim 39.

The amended claims add the limitation that the inert base particles be prepared from a mixture including stone dust and a binder. Joedicke does not disclose or suggest this limitation. Because the presently claimed invention is not identically disclosed, explicitly or inherently, in Joedicke, the presently claimed invention is not anticipated thereby and the rejection should be withdrawn for that reason.

The Examiner states the rejection was made for the reasons of record set forth in paragraph 6 of the Office Action mailed August 10, 2005. There the Examiner asserted that Joedicke discloses a process for producing algae resistant roofing granules, the process comprising applying to base granules a first coating composition containing sodium silicate, a kaolin clay (aluminosilicate) and a combination of cuprous oxide and zinc sulfide, and kiln-firing the coated granules (referencing column 2, lines 45-65), cooling the fired coated granules and applying to the algaecide bearing granules a second coating composition containing sodium silicate, a kaolin clay and a pigment (claimed colorant composition), and kiln-firing the colorant-coated algaecide bearing granules 740-760 degrees F (393-404 degrees C) (referencing column 4, lines 25-31) to fuse the binder (referencing column 3, lines 8-14).

Responding to applicants' arguments the Examiner states that while applicants argue that the mineral aggregates employed by Joedicke are "natural base rocks such as greenstone, rhyolite, andesite, basalt, nepheline syanite, and the like" (col. 4, lines 15-19), and that these mineral aggregates employed are not explicitly known to be porous, and there is nothing to suggest any are inherently porous. To disprove applicants' contention, the Examiner states that it is well known that the disclosed "natural base rocks such as greenstone, rhyolite, andesite, basalt, nepheline syanite, and the like" are porous inherently. The Examiner states that it is well known that even the relatively non-porous rocks have a substantial porosity, as evidenced by U.S. Patent 2,981,636 (referencing column 3, lines 8-18) to Lodge et al. which the applicants submitted with their information disclosure statement of January 23, 2004.

However, Lodge et al. actually says that even relatively non-porous rocks or minerals have substantial porosity "compared with [Lodge's] finished coatings "(Lodge,

col. 3, lines 15-18). Those coatings are “substantially water insoluble” (col. 3, lines 4-6). Thus, the “substantial” porosity characterization that the Examiner cites is only by comparison with the coatings which Lodge applies over the rocks or minerals, and is not quantified. Applicants have amended the claims to quantify the extent of the porosity of the base particles. New claims 41 and 44 require that the roofing granules have a porosity of between 3 percent and 30 percent by volume. However, the issue raised in connection with this rejection, whether non-agglomerated “inert base particles” disclosed in the prior art are “porous” has been mooted by the present amendment, because applicants now require the inert base particles to be formed from a mixture including stone dust and a binder.

Joedicke does not identically disclose the presently claimed invention, as noted above. Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 102(b) over Joedicke as applicable to the amended claims are respectfully requested for these reasons.

Moreover, there is nothing in Joedicke that would suggest applicants’ presently claimed invention to one of ordinary skill in the art. Joedicke takes a different approach to algae resistance, obtaining slow release of zinc and copper ions by putting them in an inner layer over the base particles and covering that layer with a colorant containing layer. There is nothing to suggest (1) putting the algaecide in or on the base particle, or (2) forming a porous base particle from stone dust and binder.

Claims 1, 5-8, 16, and 17 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,528,842 (“Skadulis”) for the reasons of record set forth in paragraph 7 of the Office Action mailed August 10, 2005. This rejection is respectfully

traversed, and reconsideration and withdrawal of the rejection, as applicable to the amended claims, are respectfully requested.

Claims 1, 6, 16 and 17 have been canceled, and the dependency of claims 5, 7, and 8 has been changed, so that these claims now depend, directly or indirectly, from new independent claim 39.

Claim 39 requires preparing porous, inert base particles from a mixture including stone dust and a binder. Skadulis fails to disclose preparing base particles in this matter, and instead merely discloses coating greystone or nepheline syenite granules of #11 grade to form base particles. Since Skadulis does not expressly or inherently identically disclose the presently claimed invention, there is no anticipation.

Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 102(b) over Skadulis as applicable to the amended claims are respectfully requested for this reason.

Nor does Skadulis render the presently claimed invention obvious. There is nothing in Skadulis' disclosure to reveal or suggest applicants' presently claimed invention to one of ordinary skill in the art. Skadulis merely suggests the use of conventional aggregate for use as base particles, and a different approach to the problem of extended release of algaecide from the granules, using a water-permeable coating. Skadulis does not teach or suggest preparing porous, inert base particles from a mixture including stone dust and a binder.

Claims 1, 5-8, 16, and 17 stand finally rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 3,507,676 ("McMahon") for the reasons set forth in paragraph 8 of the Office Action mailed on August 10, 2005. This rejection is also respectfully but

strenuously traversed, and reconsideration and withdrawal of the rejection are respectfully requested as applicable to the amended claims.

As noted above, claims 1, 6, 16 and 17 have been canceled, and the dependency of claims 5, 7, and 8 has been changed, so that these claims depend, directly or indirectly, from new independent claim 39.

Responding to applicants' arguments, the Examiner noted her disagreement with applicants' characterization of McMahon and Skadulis' mineral aggregates such as greystone or nepheline syenite granules as not being porous, inert base particles.

However, as explained above, new claim 39 requires preparing porous, inert base particles from a mixture including stone dust and a binder. McMahon fails to disclose preparing base particles in this fashion, and instead merely discloses coating greystone or nepheline syenite granules of #11 grade to form base particles. McMahon does not expressly or inherently identically disclose the presently claimed invention, and therefore does not anticipate the presently claimed invention.

Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 102(b) over McMahon as applicable to the amended claims are respectfully requested for this reason.

Similarly, McMahon does not render the presently claimed invention obvious, because there is nothing in McMahon's disclosure to provide or suggest applicants' presently claimed invention to one of ordinary skill in the art. McMahon, like Joedicke and Skadulis, suggests only the use of conventional aggregate for use as base particles, and a very different approach to the problem of extended release of algaecide from the granules, using a coating with a zinc algaecide, or scattering metallic zinc particles among conventional roofing granules.

Claims 2-4, 15, and 18 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Joedicke, Skadulis, or McMahon in view of U.S. Patent 4,946,505 (“Jungk”) for the reasons of record set forth in paragraph 10 of the Office Action mailed on August 10, 2005. This rejection is respectfully traversed. Reconsideration and withdrawal of the rejection as applicable to the amended claims are respectfully requested.

Claims 2, 3, 15 and 18 have been canceled, and claim 4 has been amended to depend from new independent claim 39. New claim 39 requires preparing porous, inert base particles from a mixture including stone dust and a binder, and insolubilizing the binder.

Jungk is completely contradictory.

Jungk binds pigment powder (not stone powder) with a soluble binder, if fact a surfactant, that must promote the dispersion of the pigments in concrete. Thus, there is nothing in Jungk, nor in the combination of Jungk with any of Joedicke, Skadulis or McMahon, that would teach or suggest the presently claimed invention to one of ordinary skill in the art, and the rejection should be withdrawn for this reason.

Responding to applicants’ arguments, the Examiner noted that applicants argued that the references combined by the Examiner, namely Joedicke, Skadulis, or McMahon in view of Jungk, does not establish a *prima facie* case of obviousness. Even if one of ordinary skill in the art were to follow the combined teachings of the cited references, she would not arrive at the process of the presently claimed invention. Applicants had argued that there is no motivation or suggestion in any of the cited references nor in any combination of the cited references that would induce one of ordinary skill in the art to combine their teachings in the manner suggested by the Examiner.

The Examiner respectfully disagreed with applicants' argument. The Examiner stated that it is well known in the art that dusty mineral powders formed during crushing and sieving can be re-used by granulating the dusty powders. The Examiner further stated that she was employing Jungk as a secondary reference to show that dusty powders can be granulated by means of conventional rotating pelletizing drum or plate.

The Examiner further states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used stone dust in Joedicke, Skadulis, or McMahon by first granulating the dusty stone by means of conventional rotating pelletizing drum or plate and an aqueous solution of a binder, as taught by Jungk since it is well known in the art that dusty mineral powders formed during crushing and sieving can be re-used by granulating the dusty powders.

In her comments on applicants' arguments, the Examiner emphasizes that she is relying on Jungk merely as a secondary reference, and for the purpose of showing that dusty powders can be granulated by means of a conventional rotating drum or plate, and that it is allegedly well known in the art that dusting mineral powders formed during crushing and sieving can be re-used by granulating those dusty powders.

However, in the Office Action mailed August 10, 2005, the Examiner does not allege that it is well known in the art that dusty mineral powders formed during crushing or sieving can be granulated by means of a conventional rotating drum or plate. Further, in her comments, the Examiner relies upon this allegation in stating her rejection.

Substantively, the Examiner is taking official notice of these alleged facts, and relying on the official notice to make her rejection.

Applicants believe that this is a new rejection, which was not stated in the Office Action mailed August 10, 2005. This new rejection was not necessitated by applicants'

claim amendments in response to the initial Office Action, as is clear from the fact that the Examiner was apparently implicitly relying on the alleged facts in making her initial rejection. It is improper to make a final rejection in a second action on the merits where a new ground of rejection, not necessitated by applicant's amendment, is being made in the second action. MPEP 706.07(a).

As to the merits of the rejection, applicants respectfully contend even with the addition of official notice to the alleged practice of granulating fine mineral dust with a binder, taken in combination with each of Joedicke, Skadulis and McMahon in view of Jungk, a *prima facie* case of obviousness is not made out with respect to applicants' presently claimed invention.

Nothing in any of the references suggests or would disclose to one of ordinary skill in the art that algaecide should be provided *within* base particles formed from stone dust and a binder. On the contrary, the primary references all teach that the algaecide should be incorporated in layer *applied to the outside* of such particles. Joedicke discloses forming a first or inner lay including algaecide (col. 2, lines 2-8), and optionally providing an outer layer also containing algaecide (col. 2, lines 26-32). Similarly, Skadulis discloses coating raw mineral granules with a silicate composition containing cuprous compound (col. 3, lines 16-47). McMahon similarly discloses coating base raw material granules (col. 3, lines 20-52). As the Examiner now acknowledges, the secondary reference Jungk is irrelevant except for its showing of the conventional use of a conventional plate or drum pelletizer to granulate a dusty powder. The Examiner has in effect taken official notice of the alleged practice of granulating stone powder. However, there is nothing in any of these to suggest that algaecide be incorporated within granules formed from stone powder. If one of ordinary skill in the art were to

follow the combined teachings suggested by the Examiner, she would arrive at coated granules having algaecide in the coating but not in the base particle. Such coated granules would not meet the limitations of applicants' present claims.

The Examiner did not respond to this argument when applicants made it in respect of claims 15 and 17 in their response to the prior Office Action.

Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 103(a) over the combination of Joedicke/Skadulis/McMahon in view of Jungk and the Examiner's notice of the alleged practice of granulating stone dust as applicable to the amended claims are respectfully requested for these reasons.

Claims 9-12 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Joedicke or Skadulis in view of Jungk, further in view of U.S. Patent 6,306,795 ("Ryan") for the reason set forth in paragraph 12 of the Office Action mailed August 10, 2005. This rejection is also respectfully but strenuously traversed. Reconsideration and withdrawal of the rejection as applicable to the amended claims are respectfully requested.

The claims have been amended such that the claims 9-12 depend ultimately from new claim 39.

Responding to applicants' arguments in their response to the Office Action mailed August 10, 2005, the Examiner states that Applicants argue that a combination of references Joedicke Skadulis/McMahon in view of Jungk, further in view of Ryan et al. does not establish a *prima facie* case of obviousness because Ryan is not properly combinable with Joedicke or Skadulis because Ryan relates to a non-analogous art, the preparation of chemical catalysts. The Examiner further states that in response to applicants' argument that Ryan et al is non-analogous art, it has been held that a prior

art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of this invention, citing *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). The Examiner further states that Ryan et al teach that cuprous oxide can be incorporated into a porous carrier material such as silica/alumina (referencing column 10, lines 27-28) by impregnating the porous carrier material with an aqueous solution of copper salts such as copper nitrate using, for example, well known pore-volume impregnation, (referencing col. 11, lines 4-7, 22-42, 50- 67), air drying and calcining the impregnated porous carrier material at 200 degrees C-540 degrees to convert the copper salt to cupric oxide, cuprous oxide, or a mixture of the two (referencing column 12, lines 1-22). The Examiner concludes that, therefore, in this case, Ryan et al is reasonably pertinent to the particular problem with which the applicant was concerned, namely how to incorporate cuprous oxide into a porous carrier material.

However, whatever the relevance of Ryan to the problem of incorporating cuprous oxide into a porous carrier material, Ryan adds nothing to suggest that cuprous oxide should be incorporated in the porous base particles, formed from stone dust and a binder, and provided by the present invention. Applicants' presently claimed invention required stone dust to be employed. None of the cited references disclose or suggest the use of stone dust and a binder to form granules, and providing algaecide within such granules. Consequently, the combination of references cited by the Examiner does not establish a *prima facie* case of obviousness of applicants' presently claimed invention.

Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 103(a) over the combination of Joedicke/Skadulis/McMahon in view of Jungk and further in view

of Ryan as applicable to the amended claims are respectfully requested for these reasons.

Claims 13-14 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Skadulis for the reasons of record set forth in paragraph 12 of the Office Action mailed August 10, 2005. This rejection is respectfully traversed, and reconsideration and withdrawal of the rejection are respectfully requested as applicable to the amended claims.

The claims have been amended such that the claims 13 and 14 depend ultimately from new claim 39.

The Examiner had previously stated that Skadulis is applied in this rejection for the same reasons previously stated. The Examiner also stated that Skadulis further teaches that a colored coating in a silicate binder followed by firing has been used to obtain colored granules (referencing column 1, lines 61-72 to column 2, lines 1-5). The Examiner admitted that, Skadulis does not expressly show that the algaecidal coating is further coated with a colored coating to obtain colored granules.

The Examiner concluded that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have coated the algaecidal coating in Skadulis with a colored coating in a silicate binder followed by firing, since Skadulis further teaches that a colored coating in a silicate binder followed by firing has been used to obtain colored granules.

Applicants respectfully note that the Examiner's citation of Skadulis does not establish a *prima facie* case of obviousness with respect to Claims 13 and 14, as amended.

Claim 13 now depends from Claim 39, which requires preparing porous inert base particles from a mixture including stone dust and a binder. Skadulis does not disclose or suggest such base particles. Thus, coating Skadulis' base particles with an algaecidal coating followed by a color coating would not provide process for producing algae-resistant roofing granules disclosed in Claims 13 and 14.

Thus, there is nothing which discloses or would suggest the presently claimed process to one of ordinary skill in the art. Reconsideration and withdrawal of the rejection entered under 35 U.S.C. 103(a) of claims 13 and 14 over Skadulis are respectfully requested for these reasons.

Applicants respectfully solicit reconsideration, withdrawal of the rejections entered, and an early notice of allowance.

Respectfully submitted,

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